

1917.
NEW ZEALAND.

DRAINAGE OF LAKE WAIATARUA (ST. JOHN'S LAKE)

(REPORT ON), BY J. B. THOMPSON, CHIEF DRAINAGE ENGINEER.

Laid on the Table of the House of Representatives by Leave.

Re Lake Waiatarua (St. John's Lake).

The Under-Secretary for Lands, Wellington.

Auckland, 15th August, 1917.

IN accordance with instructions contained in your wire of the 10th ultimo and a further wire from the Hon. Minister, I herewith beg to report upon the drainage of the above-named lake.

PROPOSALS OF WAIATARUA DRAINAGE BOARD.

1. The main object of this Board is to entirely drain the lake-basin per medium of a tunnel, which is now driven from Orakei Creek through the ridge to Lake Waiatarua. This tunnel is not yet lined, but it was intended to place therein concrete pipes of 3 ft. in diameter. However, this intention has been lately altered, and the new proposal is to enlarge tunnel and line it in concrete.

2. By entirely draining the lake-basin the following lands would be unwatered :—

	A.	R.	P.	
(a.)	171	1	0	Swamp and inundated lands adjacent to Lake Waiatarua.
(b.)	55	0	20	Lake-bed.

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3. (c.) It is proposed to vest in the Auckland City Council by Mr. R. H. Abbott, as a free gift, 100 acres as a park.

(d.) The trustees of the Church of England to provide a 100 ft. road, equalling 33 acres 1 rood 20 perches.

(e.) That endeavours be made to vest in the Auckland City, by aid of a local Bill, the lake-bed, consisting of 55 acres and 20 perches, which is to be drained and formed into a park.

Should the proposals as above go through, then Auckland City contributes £2,500 towards increasing the size of the tunnel, and, further, is to construct the proposed new road or drive.

The accompanying plans show the above proposals.

4. I am instructed to report—

(f.) Whether it would be practicable to remove the surface waters and drain the marsh lands about Lake Waiatarua without materially injuring the lake itself, and whether larger powers would be required to be given to the Board to enable it to carry out such operations, and at the same time preserve the lake.

(g.) To report the probable effect of drainage of lake on the Onehunga water-supply.

As regards (f), I have gone to considerable trouble in obtaining soundings of the lake, and these are clearly shown on Plan 5 accompanying this report. It will be noticed that the flood-level is now considerably above summer level, probably some 4 ft. 6 in. The lake-basin is practically of frying-pan shape, and deepens quickly from margin of lake. The whole of marshy and other lands were inundated at time of my inspection, and, generally speaking, these lands are now submerged from 4 ft. to 5 ft. 6 in. in average deepest portions.

Plan 5 shows all particulars and gives contours representing the effects of lowering lake to several levels. In red and green respectively are shown alternate levels to which lake could be lowered.

(h.) I am of the opinion that the proposal (my own) to lower lake to 81.50 ft. would adequately drain all the marsh lands surrounding the lake. This would enable a main drain to traverse swamp with a fall of 4 ft. per mile (1 in 1,320), such drain to start 2 ft. deep at commencement. Fall is very ample, and could be flattened if necessary. This scheme would leave a lake area of 46 acres with 4 ft. 9 in. of water in deepest portions.